

REMARKS

Status of the Claims

Claims 1-35 were presented for examination, and were rejected. Claim 21 has now been amended, and claim 30 has been canceled. The amendments add no new matter, and entry of the amendments is requested. Reconsideration in view of these amendments and the following remarks is respectfully requested.

Objections

Claims 21 and 30 were objected to as not further limiting the claim from which they depend. Claim 21 has been amended to recite particles that are “wholly” embedded in the material of the coating film, thus it further limits claim 1. Claim 30 has been canceled. Accordingly, these objections can be withdrawn.

Rejections under 35 U.S.C. 103

The only outstanding rejection of the claims is for obviousness, and is based on a combination of two references, Pourahmadi (U.S. Patent No. 6,440,725) and Burdon (U.S. Patent No. 6,572,830). According to the Examiner, Pourahmadi discloses the invention “substantially as claimed,” but “does not teach that the coating comprises a particulate particle that are [sic] wholly embedded or partially embedded within the material of the coating film.” However, the Examiner alleges that Burdon discloses this limitation,

by teaching a microfluidic device with fluid passageways, wherein the microfluidic device is formed by sheet layers that include particles such as ceramic particles, glass particles and glass-ceramic particles (col. 3, lines 19-20). Burdon et al. also teach that the sheet may additionally include additives such as plasticizers [sic: plasticizers] and dispersants [sic: dispersants] (col. 7, lines 1-3). Burdon et al. teach that the sheet layers may be advantageously provided with different properties, and may include glass particles, so as to provide an optically transmissive layer allowing external optical access to portions of the fluid passageways in the device (col. 3, lines 44-51). It would have been obvious to one of ordinary skill in the art at the time the invention was made to form the Pourahmadi et al. wall channels from a sheet layer with plasticizers and glass particles as taught by Burdon et al. because Burdon et al. teach that the glass

particles provide the benefit of allowing external optical access to portions of the fluid passageways in the device, as would be desirable for use of the microfluidic device in an assay.

Office Action at page 3-4.

The applicant traverses this rejection. The Examiner has not established a proper motivation to combine the two cited references. According to the Examiner, the only motivation for or advantage derived from modifying the Pourahmadi device to use the sheet layer from Burdon is “allowing external optical access to portions of the fluid passageways in the device.” However, Pourahmadi discloses that its device “comprises a base substrate 22 and a top substrate 24 bonded to the base substrate 22. The substrates 22 and 24 may comprise any suitable substrate materials, such as silicon, glass, silicon dioxide, plastics or ceramics.” Pourahmadi, col. 22, lines 50-54. Thus Pourahmadi states that its substrate(s) may be made of glass, which would already provide an “external optical access.” Since the Pourahmadi device already provides a device made of optically transmissive materials, the person having ordinary skill would not have been motivated to modify the Pourahmadi device to incorporate the sheet layer from Burdon, because the Pourahmadi device *already possesses the advantage allegedly provided by the combination*. Accordingly, there would have been no motivation to combine the cited references, so no *prima facie* case for an obviousness rejection has been established and this rejection should be withdrawn.

Also, the combination of Burdon with Pourahmadi would be incompatible with certain of the dependent claims. For example, claim 26 recites a platform of claim 21, “wherein said particulate particles comprise at least in part a biological group.” The Examiner asserts that this is also obvious, because Pourahmadi allegedly teaches a coating film that comprises in part a biological group, and “It would have been obvious...that in modifying the coating film of Pourahmadi et al. as taught by Burdon et al., the film, including the particles, will comprises [sic] in part the biological or chemical group taught by Pourahmadi et al.”

However, Burdon discloses sintering together its ‘green-sheet layers’ to form a ‘substantially monolithic’ structure. Thus its devices comprising a green-sheet layer are subjected to high heat as part of the assembly process. See, e.g., Burdon, col. 7, lines 13-15: “The green-

sheet layers are laminated together and then fired to form a substantially monolithic multilayered structure.” The biological groups mentioned in Pourahmadi would not have been incorporated into the green-sheet layer of Burdon by one of ordinary skill, because one of ordinary skill would not have expected the biological group to survive the firing process. The thermal instability of such substances is well known in the art, and one of ordinary skill would not have had a reasonable expectation that such biological groups would survive the sintering process that Burdon uses to incorporate its green-sheet layers. Thus the combination cannot render obvious dependent claim 26.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue. If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the event the U.S. Patent and Trademark office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing docket no. 471842001600. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

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Respectfully submitted,

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